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ABSTRACT

This autoinstructional lesson deals with the study of the human body with emphasis on the life process of reproduction. It is a learning activity included in high school biology or health education classes. The behavioral objectives are listed and the equipment and materials needed to help the student gain these objectives are also included in the packet. It is suggested that 20 minutes will be needed to complete the lesson. A complete vocabulary sheet is presented with the student script. (EB)

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MALE REPRODUCTIVE SYSTEM

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TEACHER'S GUIDE

PACKET NUMBER	612.61 T
SUBJECT	Health
TITLE	Male Reproductive System
LEVEL	High School
PREREQUISITES	None
BEHAVIORAL OBJECTIVES	1. Identify the parts of the male reproductive system. 2. Describe the function of each part of the male reproductive system. 3. Trace the path of the male sex cell from the time it is produced until the time it is released from the body.
EQUIPMENT	Eleven slides Vocabulary list and student guide Model of the male reproductive system Slide viewer Cassette tape recorder and earphones Model of male reproductive system Paper
TIME	20 minutes
SAMPLE EVALUATION	Work sheet
SPACE REQUIRED	Carrel
BIBLIOGRAPHY	Broderick C. and Bernard, Jr. The Individual, Sex, Johns Hopkins Press, Baltimore, Md. 1969. Slides - Human Reproduction 100, Guidance Associates/Harcourt, Brace and World.

STUDENT VOCABULARY SHEET

HEALTH
MALE REPRODUCTIVE SYSTEM

1. Puberty	Stage of life at which the reproductive organs begin to function and the secondary sex characteristics become visible.
2. Testosterone	Male sex hormone.
3. Semen	Fluid produced by the male reproductive glands containing the sperm and secretions from the testes, prostate gland and seminal vesicles.
4. Penis	Male sex organ used for urination and sexual intercourse.
5. Scrotum	Pouch of skin in which the testes are located.
6. Testes (testicles)	The pair of reproductive glands that produces sperm.
7. Epididymis	Tubes coiled in the scrotum in which the sperm is collected before passing into the vas deferens.
8. Sperm	The mature male sex cell.
9. Urethra	Canal through which urine is discharged and in the male through which semen is released from the body.
10. Vas deferens	Sperm duct leading from the epididymis to to the seminal vesicles and the urethra
11. Seminal Vesicles	Two small sacs which secrete a fluid constituting part of the semen connected to the testes by the vas deferens.
12. Prostate gland	The muscular organ surrounding the neck of the bladder which supplies a portion of the fluid of the semen.
13. Erection	Reflexive filling of the penis in the male in which the penis changes from a flaccid to a rigid organ.
14.. Ejaculation	Reflexive act of releasing the semen.

STUDENT GUIDE

HEALTH
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Objectives

1. Using the chart provided, the student will locate the parts of the male reproductive system and will recognize the function of each part.

2. The student will be able to trace the path of the sperm from its production to its release from the body.

General Directions

When you are ready to begin this program, start the tape. Please do not begin the slides until you are told to do so. You will hear music as a signal to turn to the next slide.

At the end of the discussion, you will be given a self-test to see how much you have learned.

SCRIPT INTRODUCTION

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At the completion of this program on the male reproductive system, you should be able to locate the parts of the male reproductive system and should be able to recognize the function of each part. You should also be able to trace the path of the sperm from its production to its release from the body.

Please listen to the following directions: Do not begin the slides until you are told to do so. You will hear music as a signal to turn to the next slide. Also note that there is a vocabulary list included for your use in this program.

At the end of the discussion, you will be given a self-test to see how much you have learned.

SCRIPT

HEALTH
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From birth until about 8 or 9 years of age nothing much happens in a child's sexual development. At about 8 years, a gradual build-up of the hormones - testosterone and estrogen begin in both boys and girls, although testosterone predominates in the male. By about age 10 or 11, the level of testosterone begins to increase dramatically. At 12 or 13 years, the pituitary gland, located at the base of the brain, sends out quantitites of hormones that stimulate the manufacture of sperm in the male. This stage of life is called puberty. Between these ages of 11 and 15, the male voice will begin to change and hair will appear under the arms, on the chest, on the pubic area and on the face, producing a beard. His body will broaden in relation to his hips and his muscles will develop.

The exact onset of these changes varies from individual to individual and also from culture to culture. At whatever age it occurs, puberty completes the process of maturation by which men and women become physically able to play their parts in the process of reproduction.

A series of slides will be used to explain the parts of the reproductive system and how the system functions. Please turn to the next slide each time the music is played.

MUSIC - SLIDE 4. There are two main parts to the <u>external</u> male reproductive system - the penis and the scrotum.

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The penis is the external male sex organ that is used for urination and for sexual intercourse.

The scrotum is a pouch of skin which hangs from the groin area and contains the testes, which are the glands that produce the sperm which is also called the male sex cell.

MUSIC - SLIDE 8. This side view of the penis and scrotum shows the inside of the testis. The testis contains a coil of tubing which manufactures the sperm. After the sperm is produced it is emptied into the collection tubes called the epididymis, which lie against the testes in the scrotum.

MUSIC - SLIDE 6. This diagram shows a magnified view of a sperm, the male sex cell. It consists basically of a head portion and a tail. This tail is used to propell the sperm toward the female egg when the sperm is released during sexual intercourse. The head of the sperm carries the chromosomes which determine the sex and the characteristics of a resulting baby.

MUSIC - SLIDE 7. This magnified photograph shows the many sperm, which are contained in the semen which is the fluid produced by the reproductive glands.

MUSIC - SLIDE 15. After the sperm is produced in the testis and collected in the epididymis, it travels through the tube called the

vas deferens, which is about 14" - 18" in length. The end of this tube widens and is used as a storage for the sperm until it is released from the body.

The seminal vesicle is a sac-like structure about 4 1/2 inches in length which supplies the largest part of the fluid contained in the semen.

The prostate gland weighs approximately 2/3 oz. and also secretes fluid that makes up the semen.

The semen or seminal fluid is made up of secretions from the epididymis, the seminal vesicles, the prostate gland and the sperm that was produced by the testes.

The urethra is the tube or duct through which the urine passes from the bladder to be excreted and also through which the semen passes to be released from the body.

The bladder is a hollow organ which serves as a reservoir for the urine or liquid waste.

MUSIC - SLIDE 12. You will notice that the reproductive system in this diagram is outlined in pink. The rectum, the lower part of the large intestine, contains the solid waste products, which are excreted through the opening in the body called the anus.

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MUSIC - SLIDE 14. At the time of sexual excitement, the blood vessels that carry blood to the penis enlarge and cause the penis to become erect. This stiffening and enlarging of the penis is called erection.

During this sexual excitement, the muscles in the pelvic region contract and the valve at the entrance to the bladder is closed tightly. This prevents any urine from being released at the time of ejaculation.

MUSIC - SLIDE 15. Now we will follow the path of the sperm until it is released from the body.

The nerve impulses from the sexual organs cause this sudden release of semen from the body called ejaculation.

The sperm is released from the reservoir at the end of the vas deferens and mixes with the fluid released from the seminal vesicles and prostate gland. The semen is then forced along the urethra by the contracting of the prostate gland and by the muscles of the penis itself and is released in ejaculation. About 1 teaspoon of seminal fluid is ejaculated which contains up to 1/2 billion sperm.

MUSIC - SLIDE 10. Now take a look at this front view of the male reproductive organs. Do you remember the function of these parts? Study this diagram and when you think you have learned the location of these parts, turn to the next slide to test yourself. SLIDE 11. The music will play while you review. MUSIC - 1 minute.

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MUSIC - SLIDE 10. Did you remember the name of all the parts?

Before you take the self-test, turn off the tape recorder and review the information by studying the vocabulary list.

After you have reviewed the vocabulary, turn the tape recorder back on to receive instructions for the self-test.

PAUSE. Please turn the slide projector off.

I will ask you 10 questions on the material you have just studied. This test will allow you to see just how much you have learned. In order for this to be an accurate test of your knowledge, please do not look at your vocabulary list during the test. You may write your answers on the paper provided.

During the first part of the test you will use the model that has been provided. Note that each part of the male reproductive system is numbered.

The following questions should be answered by writing the number of the specific part of the system that best answers the question.

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1. Locate the small organ that produces the sperm or male sex cell.

MUSIC

2. Locate the tube which carried both urine and sperm at different times.

MUSIC

3. Locate the tube which carries the sperm from its place of production to its place of storage.

MUSIC

4. Locate the 2 parts of the system that produce most of the fluid contained in the semen.

MUSIC

5. Locate the part which stores the sperm until it is released from the body.

MUSIC

Answer the following questions by writing the correct response on your answer sheet.

6. What is the name of the sacs which contain the testes?

MUSIC

7. What is the name of the male hormone?

MUSIC

8. What is the liquid medium in which the sperm are carried?

MUSIC

9. Where are the chromosomes contained which control inherited characteristics?

MUSIC

10. What is the name for the sudden release of sperm from the body?

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MUSIC

PAUSE

Now I will give you the answers to your self-test.

The first questions was - locate the small organ that produces the sperm or male sex cell. If you answered #1, you are correct. The sperm is produced in the testes labeled 1 on your model.

The second question read - locate the tube which carries both urine and sperm at different times. The answer is the urethra numbered 9 on your model.

The third question was - locate the tube which carries the sperm from its place of production to its place of storage. The answer was the vas deferens numbered 3 on your model.

The fourth question asked you to locate the 2 parts of the system that produce most of the fluid contained in the semen. Your answer should be #'s 5 and 7. The seminal vesicle was labeled #5 and the prostate gland was labeled #7.

The fifth question asked you to locate the part which stores the sperm until it is released from the body. Your answer should be #4. The end of the vas deferens which is widened for the purpose of storing the sperm.

Number 6 asked you to name the sacs which contain the testes. The answer is the scrotum.

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Number 7 asked you to name the male hormone which is testosterone.

Number 8 asked you to name the liquid medium which contains the sperm. Your answer should be, semen.

Number 9 asked what contains the chromosomes. The answer is that the sperm carries these chromosomes.

The last question asked you to name the sudden release of sperm from the body. The answer is the process called, ejaculation.

How many of the questions did you answer correctly? It might be interesting to see how many of the terms you spelled correctly by checking back over your vocabulary list.

You have now completed the unit on the male reproductive system.

Please turn off the tape recorder and leave everything as you found it. You may keep your answer sheet. Thank you.